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ABSTRACT. This study examined risk indicators of chronic verbal aggression, physical aggression, and financial mistreatment in a population-based sample of 1,797 independently living elderly in Amsterdam, The Netherlands. Included were socio-demographic characteristics, physical and psychological health, and functional capacity. The data were collected using standardized interviews that took place in the homes of the respondents. The results showed that chronic verbal aggression was associated with an elder living with a partner or other(s) and in poor or bad health. Physical aggression was associated with an elder living with a partner or other(s) and having depressive symptoms. Finally, financial mistreatment was associated with being male, living alone, being partially dependent in instrumental activities of daily living and having depressive symptoms. The results indicate that the risk indicators of victims of financial mistreatment differ from those of chronic verbal aggression and physical aggression, suggesting that fi-

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nancial mistreatment may occur more often as a single form of abuse whereas verbal and physical aggression may more frequently occur together.

INTRODUCTION

International awareness of the need for early prevention of elder mistreatment is increasing. Mistreatment of older people by those who have a personal or professional relationship with them has been called a hidden problem. Victims rarely talk about the mistreatment or ask for help. To improve the abilities of healthcare professionals to recognize persons at risk for elder mistreatment, it is important to identify the factors that are associated with abusive behavior. Research on risk indicators for elder mistreatment using community-based samples has been carried out in several countries (Pillemer & Finkelhor, 1989; Podnieks, 1990; Lachs, 1994). In this type of research, four major categories of elder mistreatment are generally differentiated: (1) physical aggression, (2) psychological mistreatment or chronic verbal aggression, (3) financial or material mistreatment, and (4) neglect (e.g., Podnieks et al., 1990). The results of these studies show that mistreatment of an elder is more likely to occur when the abused lives together with the abuser, is in poor health, is dependent, depressed, and socially isolated. Not all studies reported separate risk factors for the different types of elder mistreatment. However, the associations found for neglect (Pillemer & Finkelhor, 1988, 1989) as well as those for financial mistreatment (Podnieks et al., 1990) appear to be different from those of verbal and physical aggression. Therefore, in cross-sectional community based research, pooling of these types of elder mistreatment seems inappropriate.

In the above cited studies, people were identified as victims of physical aggression or financial mistreatment if they had been mistreated at least once since reaching the age of 65 years. Since this time frame can cover a very long period, especially for the oldest-old, memory problems can interfere and result in misclassification as to whether the mistreatment occurred or had not occurred and the various types. Prospective studies with repeated measurements can prevent this bias, but they are very time consuming and expensive (Lachs et al. 1994).

In The Netherlands, a community-based study on elder mistreatment was initiated in 1994. The 1-year prevalence of elder mistreatment was 5.6%. The prevalence of the individual types of elder mistreatment was chronic verbal aggression 3.2%, physical aggression 1.2%, financial mistreatment 1.4%, and neglect 0.2% (Comijs et al., 1998). Also investigated in the study was whether certain characteristics of victims were associated with the specific types of

mistreatment. Because of low prevalence, neglect was omitted from this study. The characteristics under investigation included socio-demographic factors, physical and psychological health, and functional capacity. To avoid the limitations of other studies, the different types of elder mistreatment were analyzed separately. We tried to prevent misclassification by including acts of mistreatment only if they occurred in the year preceding the interview.

METHOD

Sample

The participating subjects were respondents in the Amsterdam Study of the Elderly (AMSTEL), a community-based longitudinal study on cognitive functioning and decline in non-institutionalized elderly (65 years of age) in Amsterdam, The Netherlands, which began in 1990. The population base for the AMSTEL included all individuals 65-84 years of age who lived in the city and were registered with a general practitioner. The sample was drawn from a list of 30 general practices (21 selected by random and 9 by convenience) spread throughout the city. These lists included most of the non-institutionalized population since general practitioners are the gatekeepers into the healthcare system. The age and sex distribution of the general practice population 65 years and older reflected that of the corresponding Amsterdam population. The mean proportion of the elderly in the general practices (15%) was equal to the proportion of elderly in the Amsterdam population (Launer et al., 1993). Within each practice a fixed proportion of respondents was randomly selected from each of four 5-year age strata (65-69, 70-74, 75-79, and 80-84) to form equal-sized sub-samples. Of the 5,666 individuals sampled, 4,051 responded (71.5%) (Launer et al., 1993). The study on elder mistreatment was carried out in 1994, at which time the respondents of the AMSTEL baseline sample who were not suffering from dementia and who were still eligible, were approached again (n = 3,293). All respondents were interviewed in their homes by intensively trained interviewers.

Measurement

A standardized interview form was used which included questions on age, socio-economic status, marital status, living situation, subjective health, and mistreatment. Furthermore, frequently used and validated questionnaires were employed to measure functional capacity, psychological health, and cognitive functioning.

Elder mistreatment. Chronic verbal aggression was defined as repeated yelling, insulting, and threatening, occurring at least 10 times during the year preceding the interview (Pillemer & Finkelhor, 1988). It was measured by several items from a revised and translated version of the Conflict Tactics Scale (Strauss, 1979; Yin, 1985) and some items from the Measure of Wife Abuse (Rodenburg & Fantuzzo, 1993). Physical aggression was defined as the infliction of physical harm, such as beating, pushing, pinching, and kicking, occurring at least one time during the year preceding the interview (based on Pillemer & Finkelhor, 1988). It was assessed with items from a revised and translated version of the Conflict Tactics Scale (Strauss, 1979; Yin, 1985), the Measure of Wife Abuse (Rodenburg & Fantuzzo, 1993), and the Violence Against Man Scales (Marshall, 1992). Financial mistreatment was defined as the illegal or improper use of one's finances or the theft of property, occurring at least once during the year preceding the interview. It was measured by two questions from the Measure of Wife Abuse (Rodenburg & Fantuzzo, 1993) and several newly developed questions.

Functional capacity. This factor was measured in two ways. The first is dependency in activities of daily living, using the translated version of the Activities of Daily Living Scale (ADL) (Katz et al.,1963) that consists of 6 questions, in which people are asked if they need assistance with, for instance, bathing and eating. Each question is rated on a three-point scale, ranging from 0 "no help needed" to 3 "not possible without help." Higher scores on this scale indicate stronger dependency of the respondent on other people for help. The second measure is dependency in instrumental activities of daily living, using the translated version of the Instrumental Activities of Daily Living Scale (IADL) (Lawton & Brody, 1969) that consists of 8 items, in which people are asked if they need help with, for instance, shopping, cooking, or transportation. Each item is rated on a four-point scale, ranging from 0 "fully independent" to 4 "fully dependent." Higher scores on this scale indicate stronger dependency of the respondent on other people.

Depressive symptoms. The Dutch version of the Geriatric Mental State Schedule (GMS) (Copeland et al., 1976; Hooijer et al., 1991) was used to measure this factor. Depression was classified on the basis of the AGECAT computer program (Copeland et al., 1988). This resulted in a dichotomized variable "depressive symptoms" and "no depressive symptoms."

Cognitive functioning. The Mini Mental State Examination (MMSE) (Folstein et al., 1975) measured cognitive function. The complete score of the 30-item scale ranges from 0-30, with scores of 24-30 indicative of normal functioning.

Analysis

Odds ratios were calculated to assess which risk indicators were associated with chronic verbal aggression, physical aggression, and financial mistreatment. First, univariate logistic regression analyses were performed with age, gender, socio-economic status, marital status (married vs. not married), living situation (living with other(s) vs. living alone), subjective health (poor/bad vs. good), ADL (range 0-18), IADL (range 0-32), MMSE (range 0-30), and depression (no/yes). Socio-economic status was divided into three classes, low (unskilled and skilled workers and lower employees), middle (small businessmen and employees) and high (professions). If the 95% confidence interval was greater than 1.00, the association was regarded statistically significant. Second, multiple logistic regression was used to determine which associations remained significant after checking for other characteristics.

RESULTS

Characteristics of the Sample

From the original AMSTEL baseline sample, 1,954 people (59.3%) participated in the interview. Non-response was due to death (10.1%), serious illness or cognitive dysfunction (8.6%), refusal (16.3%), and inability to be contacted (5.7%). Non-response was higher for older women ($p < .01$) mainly due to poor health ($p < .001$). Of the 1,954 respondents who participated in the interview, 149 had been institutionalized and eight persons were not able to answer the questions regarding elder mistreatment because of fatigue; thus 157 respondents were excluded from analysis resulting in a sample of 1,797 respondents. The mean age of the respondents was 77.2 (SD 5.5); the range was from 69 to 89 years. The age distribution was the result of the stratification procedure of the AMSTEL baseline sample. In all, 62.8% of the sample were female. Of the respondents, 58 (3.2%) were victims of chronic verbal aggression; 21 (1.2%), physical aggression; and 26 (1.4%), financial mistreatment. The prevalence of potential risk indicators among categories of victims and non-victims are shown in Table 1.

The majority of victims of chronic verbal aggression were married (64%) and/or living with their partner (69%). Over 43% of the victims reported poor or bad health compared to only 25% of the non-victims. Relatively more men (57%) were victims of physical aggression; however this difference was not significant ($p = .06$). The majority of victims of physical aggression were married (67%) and living with their partner (67%). Many victims of physical aggression showed depressive symptoms (38%) and reported poor or bad health (43%). Most victims of financial mistreatment were male (50%), single (73%), lived alone (76%), and were partially dependent on others for help with instrumental activities of daily living (62%). Furthermore, half of the victims of financial mistreatment had depressive symptoms.

TABLE 1. Prevalence of potential risk indicators among categories of victims and non-victims.

	Chronic verbal aggression (n = 58)	Physical aggression (n = 21)	Financial mistreatment (n = 26)	Non-victims (n = 1696)
Age; mean (SD)	76.4(5.2)	74.9(5.5)	78.0(6.4)	77.3(5.5)
Gender (%)				
- female	62.1	42.9	50.0	63.2
- male	37.9	57.1	50.0	36.8
Socio-Economic Status (%)				
- low	60.3	66.7	57.7	64.4
- middle	22.4	23.8	19.2	23.1
- high	17.2	9.5	23.1	12.4
Marital Status (%)				
- single	36.2	33.3	73.1	55.6
- married	63.8	66.7	26.9	44.4
Living Situation (%)				
- alone	31.0	33.3	76.0	53.0
- with partner or other(s)	69.0	66.7	24.0	47.0
Subjective Health (%)				
- good	56.9	57.1	80.8	75.0
- poor/bad	43.1	42.9	19.2	25.0
Activities of Daily Living (%)				
- completely independent	70.7	75.0	76.9	74.6
- (partially) dependent	29.3	25.0	23.1	25.4
Instrumental Activities of Daily Living (%)				
- completely independent	58.6	70.0	38.5	63.6
- (partially) dependent	41.4	30.0	61.5	36.4
MMSE; mean score (SD)	27.3(2.4)	27.4(2.0)	27.5(1.5)	27.1(3.0)
Depression (%)				
- no depressive symptoms	75.9	61.9	50.0	82.0
- depressive symptoms	24.1	38.1	50.0	18.0

Risk Indicators

The results of the univariate regression analyses of the risk indicators for chronic verbal aggression, physical aggression, and financial mistreatment are shown in Table 2.

Significant relationships were found between chronic verbal aggression

TABLE 2. Odds ratios of risk indicators for chronic verbal aggression, physical aggression, and financial mistreatment in univariate analyses.

	Chronic verbal aggression		Physical aggression		Financial mistreatment	
	OR[1]	95%CI	OR	95%CI	OR	95%CI
Age (per year older)	.98	.59-1.58	.93	.85-1.01	1.03	.96-1.11
Gender (female)						
– male	1.02	.78-1.34	1.51	.98-2.33	1.31	.89-1.93
Socio-Economic Status (low)						
– middle	.90	.58-1.40	1.10	.51-2.38	.75	.38-1.47
– high	1.28	.80-2.06	.82	.30-2.21	1.66	.88-3.14
Marital Status (single)						
– married	**1.48**	**1.13-1.94**	1.58	1.00-2.49	.68	.44-1.05
Living Situation (alone)						
– with partner or other(s)	**1.57**	**1.18-2.08**	1.50	.95-2.37	**.60**	**.38-.95**
Subjective Health (good)						
– poor/bad	**1.51**	**1.16-1.97**	1.50	.97-2.32	**.85**	**.76-.95**
Activities of Daily Living (score 0-9)	1.15	.8 8-1.51	1.04	.61-1.77	.88	.50-1.56
Instrumental Activities of Daily Living (score 0-14)	1.09	1.00-1.20	1.01	.84-1.23	**1.17**	**1.05-1.31**
MMSE (score 0-30)	1.02	.92-1.13	1.04	.87-1.25	1.04	.88-1.22
Depression (no)						
– yes	1.20	.88-1.63	**1.67**	**1.07-2.61**	**2.13**	**1.44-3.15**

[1]Significant associations ($p < .05$) are printed in bold.

and being married, living together with a partner or other(s), and having poor or bad health. In the multivariate regression analyses, living together with a partner or others and having poor or bad health remained statistically significant (Table 3).

With respect to physical aggression, in the univariate analyses an association was found with depression (Table 2). In the multivariate analyses, depression stayed significant, whereas the association with living together with a partner or other(s) became significant (Table 3).

For financial mistreatment, univariate regression analyses demonstrated significant associations with living alone, having good health, being partially dependent in instrumental activities of daily living, and having depressive

TABLE 3. Odds ratios of risk indicators for chronic verbal aggression, physical aggression, and financial mistreatment in multivariate logistic regression analysis.

	OR	95%CI
Chronic verbal aggression		
– Living with a partner or other(s)	1.61	1.22-2.15
– Poor or bad health	1.55	1.19-2.03
Physical aggression		
– Living with a partner or other(s)	1.63	1.03-2.58
– Depression	1.74	1.11-2.73
Financial mistreatrnent		
– Gender (male)	1.85	1.21-2.82
– Living alone	1.95	1.19-3.20
– Instrumental Activities of Daily Living	1.14	1.01-1.28
– Depression	1.87	1.24-2.83

symptoms (Table 2). In the multivariate analyses financial mistreatment was still associated with living alone, being partially dependent on others for instrumental activities of daily living, and having depressive symptoms (Table 3). The association with good health disappeared, but an association with male gender became significant.

DISCUSSION

In the present study, we analyzed the risk indicators of chronic verbal aggression, physical aggression, and financial mistreatment in a community-based sample of independently living older people, in The Netherlands. To prevent misclassification we based our findings on reports of mistreatment that had occurred the year before the interview was conducted. The results show that the risk indicators of chronic verbal aggression and physical aggression are fairly similar but quite different from the risk indicators of financial mistreatment. Chronic verbal aggression is associated with living with someone else and having poor or bad health, and physical aggression is associated with living with someone else and having depressive symptoms whereas financial mistreatment is associated with being male, living alone, (partially) dependent, and exhibiting depressive symptoms. The results are consistent with the findings of earlier research, although the pattern of risk indicators of financial mistreatment in our study is more specific than concluded elsewhere. Podnieks et al. (1990) investigated determinants of financial mistreatment in a community-based sample separately as well. They found an association with poor health, dependency, and depression. The

distinction between risk indicators of financial mistreatment and those of chronic verbal aggression and physical aggression indicates that financial mistreatment may occur more often as a single type of abuse whereas chronic verbal aggression and physical aggression often exist together. Further research is needed to check this assumption.

We recognize that our study has some limitations. First, due to selective non-response, severe cases of elder mistreatment were probably not part of this study. Non-response was relatively high for older women, mainly due to poor health. Research based on reported cases of severe elder mistreatment showed that mistreatment is associated with old age, being a woman, poor health, dependency, and living with others (e.g., Lau & Kosberg, 1979; Powel & Berg, 1987). Therefore, some people who are probably at high risk for elder mistreatment were not in the study, which is true of most cross-sectional research on this topic. However, especially for chronic verbal aggression and physical aggression, some of the associations reported by others for severe mistreatment (for example, living with someone else and poor health) were found in this sample as well. Since old age, gender, poor health, and dependency are closely related to each other, we may assume that the victims of chronic verbal aggression or physical aggression in our study are at risk for more severe mistreatment. Second, since our findings are based on cross-sectional data, it is not appropriate to draw causal inferences. Longitudinal research is needed to investigate associations with chronic verbal aggression, physical aggression, and financial mistreatment to determine causal relationships. Third, we considered only characteristics of the victims and not the perpetrators. Other studies have shown that the characteristics of the perpetrators, such as alcohol abuse (Pillemer & Finkelhor, 1989; Godkin et al., 1989; Jarde et al., 1992; Kurrle et al., 1992), and psychiatric problems (Godkin et al., 1989; Pillemer & Finkelhor, 1989; Kurrle et al., 1992) are associated with elder mistreatment. Although research on the characteristics of perpetrators is of great importance, for ethical reasons it was not possible to include them in our study.

In conclusion, this study has investigated risk indicators of chronic verbal aggression, physical aggression, and financial mistreatment in a community-based sample of independently living elderly in The Netherlands. Knowledge of risk indicators of even mild forms of elder mistreatment is important so that it can be identified at an early stage. To prevent worse mistreatment in the later years of life, the victims in the early stages should be provided with education about mistreatment and where to obtain help when their health is relatively good and dependency on another person is limited.

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